

Please amend the following claims:

- 5UB 10
1. (Amended) A [scalable] routing system for distributing packets in a network, comprising: [including a plurality of data compilers;]
a plurality of port adapters that receive the packets [connected to said data compilers];
a plurality of route processing engines; and
a mechanism that performs a hashing function on at least a portion of network layer information in the packets to determine a distribution of the packets to the route processing engines for processing by the engines, the distribution being such that an original packet flow comprising the packets is preserved.
- A2
2. (Amended) The [scalable] routing system of claim 1, including at least one uplink connection to an external network [connected to said at least one structure].
3. (Amended) The [scalable] routing system of claim 1, [wherein said at least one structure includes] also including a crossbar.

- A3
6. (Amended) The [scalable] routing system of claim 2, wherein [both said plurality of data compilers and] said at least one uplink connection to an external network uses [use] a hashing function to distribute packet flows among said plurality of route processing engines.

- 5UB Eⁿ
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9. (Amended) The [scalable] routing system of claim 1, wherein [8, whereby] processing power of said system can be scaled by adding additional route processing engines to said plurality of route processing engines.

Sub 11

11. (Amended) A [scalable] routing system for distributing packets in a network,
comprising: [including]

a plurality of network interfaces;

a plurality of route processing engines;

a fabric interconnecting said plurality of network interfaces and said plurality of
route processing engines;

wherein each of said plurality of network interfaces uses a hashing function to
determine a distribution of the packets [to distribute packet flows] among said plurality of
route processing engines; and

wherein the hashing function is carried out on at least a portion of network layer
information in the packets, and the distribution is such that an original packet flow com-
prising the packets is preserved [processing power of the scalable routing system can be
scaled by adding additional route engines to said plurality of route processing engines].

12. (Amended) The [scalable] routing system of claim 11, wherein said fabric in-
cludes a crossbar.

Sub 15

15. (Amended) The [scalable] routing system of claim 11, wherein said network
interfaces include [data compilers and] port adapters.

16. (Amended) The [scalable] routing system of claim 15, wherein said network
interfaces include at least one uplink connection to an external network.

Please add the following new claims:

Sub B¹

17. A method for selecting one processing engine of a plurality of processing
engines for processing at least one packet, the method comprising the steps of:

3 examining at least a portion of network layer flow information of the at least one
4 packet; and

5 selecting the one processing engine based upon, at least in part, the portion of the
6 network layer flow information in such a way as to preserve an original packet flow
7 comprising the at least one packet.

1 18. The method of claim 17, wherein the network layer flow information com-
2 prises one or more of the following network information: a network source address of
3 the at least one packet, a network destination address of the at least one packet, a net-
4 work destination address of the at least one packet, a source port of the at least one
5 packet, and a protocol type value of the at least one packet.

1 19. The method of claim 18, wherein the step of examining comprises hashing
2 the portion of the network layer flow information to produce a hash value, and the hash
3 value is used, at least in part, to select the one processing engine.

20. The method of claim 19, wherein the hash value is computed by logically
2 XORing the addresses, the port, and the protocol type value.

1 21. The method of claim 19, further comprising:
2 providing a table containing entries for use in selecting the one processing engine;
3 and
4 selecting one entry in the table specified by an index value, the index value being
5 based upon the hash value.

1 22. The method of claim 17, wherein the at least one packet is one of a plurality
2 of packets in at least one original flow, and the step of hashing is performed using a
3 hashing function that preserves the at least one original flow of the packets.

SUB E⁶ > 23. The method of claim 17, wherein the at least one packet is the one of a plu-
2 rality of packets, and the step of hashing is performed using a hashing function that
3 causes the packets to be at least mostly evenly distributed among the processing engines.

1 24. The method of claim 17, wherein the processing engines are comprised in a
2 routing system.

A7 SUB B⁵ > 25. The method of claim 22, wherein the at least one original flow comprises a
2 plurality of original flows, and the step of hashing is performed such that only a single
3 respective processing engine is selected to process respective packets belonging to a re-
4 spective original flow.

1 26. A system for selecting one processing engine of a plurality of processing en-
2 gines for processing at least one packet, the system comprising:
3 means for examining at least a portion of network layer flow information of the at
4 least one packet; and
5 means for selecting the one processing engine based upon, at least in part, the
6 portion of the network layer flow information in such a way as to preserve an original
7 packet flow comprising the at least one packet.

1 27. The system of claim 26 wherein the network layer flow information com-
2 prises one or more of the following network information: a network source address of
3 the at least one packet, a network destination address of the at least one packet, a source

4 port of the at least one packet, a destination address of the at least one packet, and a pro-
5 tocol type value of the at least one packet.

1 28. The system of claim 27, wherein the means for examining comprises means
2 for hashing the portion of the network layer flow information to produce a hash value,
3 and the hash value is used, at least in part, to select the one processing engine.

1 29. The system of claim 28, wherein the hash value is computed by logically
2 XORing the addresses, the ports, and the protocol type value.

1 30. The system of claim 28, further comprising:
2 means for providing a table containing entries for use in selecting the one proc-
3 essing engine; and

4 means for selecting one entry in the table specified by an index value, the index
5 value being based upon the hash value.

1 31. The system of claim 26, wherein the at least one packet is one of a plurality
2 of packets in at least one original flow, and the means for hashing carries out a hashing
3 function that preserves the at least one original flow of the packets.

1 32. The system of claim 26, wherein the at least one packet is one of a plurality
2 of packets, and the means for hashing carries out a hashing function that causes the pack-
3 ets to be least mostly evenly distributed among the processing engines.

1 33. The system of claim 26, wherein the processing engines are comprised in a
2 routing system.

1 34. The system of claim 31, wherein the at least one original flow comprises a
2 plurality of original flows, and the means for hashing carries out the hashing such that

3 only a single respective processing engine is selected to process respective packets be-
4 longing to a respective original flow.

1 35. Computer-readable memory comprising computer-executable program in-
2 struction for selecting one processing engine of a plurality of processing engines for
3 processing at least one packet, the instructions, when executed, causing:

4 examining of at least a portion of network layer flow information of the at least
5 one packet; and

6 selecting of the one processing engine based upon, at least in part, the portion of
7 the network layer flow information in such a way as to preserve an original packet flow
8 comprising the at least one packet.

1 36. Memory of claim 35, wherein the network layer flow information comprises
2 one or more of the following network information: a network source address of the at
3 least one packet, a network destination address of the at least one packet, a source port of
4 the at least one packet, a destination address of the at least one packet, and a protocol
5 type value of the at least one packet.

Sub B⁷ 37. Memory of claim 36, wherein the examining comprises hashing the portion
2 of the network layer flow information to produce a hash value, and the hash value is used,
3 at least in part, to select the one processing engine.

1 38. Memory of claim 37, wherein the hash value is computed by logically
2 XORing the addresses, the ports, and the protocol type value.

1 39. Memory of claim 37, wherein, when executed, the instructions also cause:

2 providing of a table containing entries for use in selecting the one processing en-
3 gine; and

4 selecting of one entry in the table specified by an index value, the index value
5 being based upon the hash value.

1 40. Memory of claim 35, wherein the at least one packet is one of a plurality of
2 packets in at least one original flow, and the hashing is performed using a hashing func-
3 tion that preserves the at least one original flow of the packets.

1 41. Memory of claim 35, wherein the at least one packet is one of the plurality of
2 packets, and the hashing is performed using a hashing function that causes the packets to
3 be at least mostly evenly distributed among the processing engines.

1 42. Memory of claim 35, wherein the processing engines are comprised in a
2 routing system.

1 43. Memory of claim 40, wherein the at least one original flow comprises a plu-
2 rality of original flows, and the hashing is performed such that only a single respective
3 processing engine is selected to process respective packets belonging to a respective
4 original flow.--

REMARKS

The Office Action mailed September 12, 2000 has been carefully considered. Re-
consideration and allowance of the subject application, as amended, are respectfully re-
quested.